

## SEQUENCE LISTING

<110> APPLICANT: Van der Ploeg, Leonardus  
Chen, Howard Y.  
Chen, Airu S.

<120> TITLE: MELANOCORTIN-3 RECEPTOR DEFICIENT CELLS  
, NON-HUMAN TRANSGENIC ANIMALS AND METHODS OF SELECTING  
COMPOUNDS WHICH REGULATE BODY WEIGHT

<130> DOCKET/FILE REFERENCE: 20561Y

<160> NUMBER OF SEQUENCES: 15

<170> SOFTWARE: FastSEQ for Windows Version 4.0

<210> SEQ ID NO:1

<211> LENGTH: 1675

<212> TYPE: DNA

<213> ORGANISM: Mus musculus (house mouse)

<400> SEQ ID NO:1

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ctgctgcctg	tctttctgtt	ctccgatgct	gcctaacctc	tctgagcacc	ctgcagcccc	180
tcctgccagc	aaccggagcg	gcagtgggtt	ctgtgagcag	gtcttcatca	agccggaggt	240
cttcttggtc	ctgggcatcg	tcagtctgat	ggaaaacatc	ctggtgatcc	tggctgtggt	300
caggaatggc	aacctgcact	ctcccatgta	cttcttccctg	tgcagccctg	ctgcagccga	360
catgctgggtg	agcctgtcca	actccctgga	gaccatcatg	atcgccgtga	tcaacagcga	420
ctccctgacc	ttggaggacc	agtttatcca	gcacatggat	aatatcttcg	actctatgat	480
ttgcatctcc	ctggtggcct	ccatctgcaa	cctcctggcc	attgccatcg	acaggtacgt	540
caccatcttc	tatgcccttc	ggtaccacag	catcatgaca	gttaggaaag	ccctcacctt	600
gatcggggtc	atctgggtct	gctgcggcat	ctgcggcgctg	atgttcatca	tctactccga	660
gagcaagatg	gtcatcggtg	gtctcatcac	catgttcttc	gccatgggtg	tcctcatggg	720
cacctatat	atccacatgt	tcctcttcgc	caggctccac	gtccagcgca	tcgcagtgct	780
gccccctgct	ggcgtgggtg	ccccacagca	gcactcctgc	atgaaggggg	ctgtcaccat	840
cactatcctg	ctgggtgttt	tcactttctg	ctgggcgcct	ttcttccctc	acctggtcct	900
catcatcacc	tgccccacca	atccctactg	catctgttac	acggccccatt	tcaacaccta	960
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attgctaggc	acccagggtt	tgtggccccct	gcctgcttat	tggctttgta	ccagtaactg	1380
tgcttcaagc	caaccagacc	ggagggtctc	cgtgagcaga	aagagtgtct	agacttccgg	1440
caagcatcct	ggctcacagc	ggccacctcc	tgaccactac	cgggagagct	ttgcacatat	1500
tctgtgggag	attgagtga	gccctgaaaa	caatgtgata	tttgctgctc	ccttccagaa	1560
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<210> SEQ ID NO:2  
 <211> LENGTH: 323  
 <212> TYPE: PRT  
 <213> ORGANISM: Mus musculus (house mouse)

<400> SEQ ID NO:2

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Met Asn Ser Ser Cys Cys Leu Ser Ser Val Ser Pro Met Leu Pro Asn
 1          5          10          15
Leu Ser Glu His Pro Ala Ala Pro Pro Ala Ser Asn Arg Ser Gly Ser
          20          25          30
Gly Phe Cys Glu Gln Val Phe Ile Lys Pro Glu Val Phe Leu Ala Leu
          35          40          45
Gly Ile Val Ser Leu Met Glu Asn Ile Leu Val Ile Leu Ala Val Val
          50          55          60
Arg Asn Gly Asn Leu His Ser Pro Met Tyr Phe Phe Leu Cys Ser Leu
65          70          75          80
Ala Ala Ala Asp Met Leu Val Ser Leu Ser Asn Ser Leu Glu Thr Ile
          85          90          95
Met Ile Ala Val Ile Asn Ser Asp Ser Leu Thr Leu Glu Asp Gln Phe
          100          105          110
Ile Gln His Met Asp Asn Ile Phe Asp Ser Met Ile Cys Ile Ser Leu
          115          120          125
Val Ala Ser Ile Cys Asn Leu Leu Ala Ile Ala Ile Asp Arg Tyr Val
          130          135          140
Thr Ile Phe Tyr Ala Leu Arg Tyr His Ser Ile Met Thr Val Arg Lys
145          150          155          160
Ala Leu Thr Leu Ile Gly Val Ile Trp Val Cys Cys Gly Ile Cys Gly
          165          170          175
Val Met Phe Ile Ile Tyr Ser Glu Ser Lys Met Val Ile Val Cys Leu
          180          185          190
Ile Thr Met Phe Phe Ala Met Val Leu Leu Met Gly Thr Leu Tyr Ile
          195          200          205
His Met Phe Leu Phe Ala Arg Leu His Val Gln Arg Ile Ala Val Leu
          210          215          220
Pro Pro Ala Gly Val Val Ala Pro Gln Gln His Ser Cys Met Lys Gly
225          230          235          240
Ala Val Thr Ile Thr Ile Leu Leu Gly Val Phe Ile Phe Cys Trp Ala
          245          250          255
Pro Phe Phe Leu His Leu Val Leu Ile Ile Thr Cys Pro Thr Asn Pro
          260          265          270
Tyr Cys Ile Cys Tyr Thr Ala His Phe Asn Thr Tyr Leu Val Leu Ile
          275          280          285
Met Cys Asn Ser Val Ile Asp Pro Leu Ile Tyr Ala Phe Arg Ser Leu
          290          295          300
Glu Leu Arg Asn Thr Phe Lys Glu Ile Leu Cys Gly Cys Asn Ser Met
305          310          315          320
Asn Leu Gly

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<210> SEQ ID NO:3  
 <211> LENGTH: 1080  
 <212> TYPE: DNA  
 <213> ORGANISM: Homo sapien

<400> SEQ ID NO:3

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ttcctacgga ccctgctgga gccccagctc ggatcagccc ttctgacagc aatgaatgct      120
tcgtgctgcc tgccctctgt tcagccaaca ctgcctaata gctcggagca cctccaagcc      180
cctttcttca gcaaccagag cagcagcgcc ttctgtgagc aggtcttcat caagcccagag      240
attttcctgt ctctgggcat cgtcagtctg ctggaaaaca tcctgggttat cctggccgtg      300

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gtcaggaacg gcaacctgca ctccccgatg tacttctttc tctgcagcct ggcgggtggcc 360
gacatgctgg taagtgtgtc caatgccctg gagaccatca tgatcgccat cgtccacagc 420
gactacctga ccttcgagga ccagttttatc cagcacatgg acaacatctt cgactccatg 480
atctgcatct ccctgggtggc ctccatctgc aacctcctgg ccacgcgctg cgacaggtac 540
gtcaccatct tttacgcgct ccgctaccac agcatcatga ccgtgaggaa ggccctcacc 600
ttgatcgtag ccactctgggt ctgctgcggc gtctgtggcg tgggtgttcat cgtctactcg 660
gagagcaaaa tggtcattgt gtgcctcatc accatgttct tcgccatgat gctcctcatg 720
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ctgccacctg ccgacggggg ggccccacag caacactcat gcatgaaggg ggcagtcacc 840
atcaccattc tcttgggcgt gttcatcttc tgctggggccc ccttcttctt ccacctggtc 900
ctcatcatca cctgccccac caacccctac tgcattctgt aactgcccc cttcaacacc 960
tacctggtcc tcatcatgtg caactccgtc atcgaccac tcatctacgc tttccggagc 1020
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<210> SEQ ID NO:4
<211> LENGTH: 360
<212> TYPE: PRT
<213> ORGANISM:Homo sapien

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<400> SEQ ID NO:4
Met Ser Ile Gln Lys Lys Tyr Leu Glu Gly Asp Phe Val Phe Pro Val
 1           5           10           15
Ser Ser Ser Ser Phe Leu Arg Thr Leu Leu Glu Pro Gln Leu Gly Ser
 20           25           30
Ala Leu Leu Thr Ala Met Asn Ala Ser Cys Cys Leu Pro Ser Val Gln
 35           40           45
Pro Thr Leu Pro Asn Gly Ser Glu His Leu Gln Ala Pro Phe Phe Ser
 50           55           60
Asn Gln Ser Ser Ser Ala Phe Cys Glu Gln Val Phe Ile Lys Pro Glu
 65           70           75           80
Ile Phe Leu Ser Leu Gly Ile Val Ser Leu Leu Glu Asn Ile Leu Val
 85           90           95
Ile Leu Ala Val Val Arg Asn Gly Asn Leu His Ser Pro Met Tyr Phe
100           105           110
Phe Leu Cys Ser Leu Ala Val Ala Asp Met Leu Val Ser Val Ser Asn
115           120           125
Ala Leu Glu Thr Ile Met Ile Ala Ile Val His Ser Asp Tyr Leu Thr
130           135           140
Phe Glu Asp Gln Phe Ile Gln His Met Asp Asn Ile Phe Asp Ser Met
145           150           155           160
Ile Cys Ile Ser Leu Val Ala Ser Ile Cys Asn Leu Leu Ala Ile Ala
165           170           175
Val Asp Arg Tyr Val Thr Ile Phe Tyr Ala Leu Arg Tyr His Ser Ile
180           185           190
Met Thr Val Arg Lys Ala Leu Thr Leu Ile Val Ala Ile Trp Val Cys
195           200           205
Cys Gly Val Cys Gly Val Val Phe Ile Val Tyr Ser Glu Ser Lys Met
210           215           220
Val Ile Val Cys Leu Ile Thr Met Phe Phe Ala Met Met Leu Leu Met
225           230           235           240
Gly Thr Leu Tyr Val His Met Phe Leu Phe Ala Arg Leu His Val Lys
245           250           255
Arg Ile Ala Ala Leu Pro Pro Ala Asp Gly Val Ala Pro Gln Gln His
260           265           270
Ser Cys Met Lys Gly Ala Val Thr Ile Thr Ile Leu Leu Gly Val Phe
275           280           285
Ile Phe Cys Trp Ala Pro Phe Phe Leu His Leu Val Leu Ile Ile Thr
290           295           300
Cys Pro Thr Asn Pro Tyr Cys Ile Cys Tyr Thr Ala His Phe Asn Thr
305           310           315           320

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Tyr Leu Val Leu Ile Met Cys Asn Ser Val Ile Asp Pro Leu Ile Tyr  
                           325                          330                          335  
 Ala Phe Arg Ser Leu Glu Leu Arg Asn Thr Phe Arg Glu Ile Leu Cys  
                           340                          345                          350  
 Gly Cys Asn Gly Met Asn Leu Gly  
                           355                          360

<210> SEQ ID NO:5  
 <211> LENGTH: 28  
 <212> TYPE: DNA  
 <213> ORGANISM:Artificial Sequence

<220> FEATURE:  
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:5  
 gatgagagaa gactggagag agagggtc

28

<210> SEQ ID NO:6  
 <211> LENGTH: 27  
 <212> TYPE: DNA  
 <213> ORGANISM:Artificial Sequence

<220> FEATURE:  
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:6  
 gaagaagtac atgggagagt gcagggtt

27

<210> SEQ ID NO:7  
 <211> LENGTH: 27  
 <212> TYPE: DNA  
 <213> ORGANISM:Artificial Sequence

<220> FEATURE:  
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:7  
 gatgagagaa gactggagga gagggtc

27

<210> SEQ ID NO:8  
 <211> LENGTH: 24  
 <212> TYPE: DNA  
 <213> ORGANISM:Artificial Sequence

<220> FEATURE:  
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:8  
 taccggtgga tgtggaatgt gtgc

24

<210> SEQ ID NO:9  
 <211> LENGTH: 45  
 <212> TYPE: DNA  
 <213> ORGANISM:Artificial Sequence

<220> FEATURE:  
 <223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:9  
agccaggatc accaggatgt tttccatcag actgacgatg cccag 45

<210> SEQ ID NO:10  
<211> LENGTH: 45  
<212> TYPE: DNA  
<213> ORGANISM:Artificial Sequence

<220> FEATURE:  
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:10  
tgcccatgag gagcaccatg gcgaagaaca tggatgatgag gcaca 45

<210> SEQ ID NO:11  
<211> LENGTH: 45  
<212> TYPE: DNA  
<213> ORGANISM:Artificial Sequence

<220> FEATURE:  
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:11  
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<210> SEQ ID NO:12  
<211> LENGTH: 25  
<212> TYPE: DNA  
<213> ORGANISM:Artificial Sequence

<220> FEATURE:  
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:12  
ctaaccataa gaaatcagca gcccg 25

<210> SEQ ID NO:13  
<211> LENGTH: 25  
<212> TYPE: DNA  
<213> ORGANISM:Artificial Sequence

<220> FEATURE:  
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:13  
agggaagtat acatgccatg gtggt 25

<210> SEQ ID NO:14  
<211> LENGTH: 25  
<212> TYPE: DNA  
<213> ORGANISM:Artificial Sequence

<220> FEATURE:  
<223> OTHER INFORMATION: oligonucleotide

<400> SEQ ID NO:14  
ctaaccataa gaaatcagca gcccg 25

<210> SEQ ID NO:15  
<211> LENGTH: 24  
<212> TYPE: DNA  
<213> ORGANISM:Artificial Sequence  
  
<220> FEATURE:  
<223> OTHER INFORMATION: oligonucleotide  
  
<400> SEQ ID NO:15  
taccggtgga tgtggaatgt gtgc

24